Date of Facsmilie: August 4, 2004

Attorney Docket No. CST-138CIP2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	Comb *et al.*		
ASSIGNEE:	CELL SIGNALING TECHNOLOGY, INC.		
SERIAL NUMBER:	10/014,485	EXAMINER:	Karen A. Cannella
FILING DATE:	November 13, 2001	ART UNIT:	1642
FOR:	PRODUCTION OF MOTIF-SPECIFIC AND CONTEXT-INDEPENDENT ANTIBODIES USING PEPTIDE LIBRARIES AS ANTIGENS		

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence, and any documents referred to as attached hereto, is/are being transmitted to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia, Facsimile Number: (703) 872-9306 on this 4th of August, 2004.

Shari R. M. Hewson

Attached hereto for filing in the above-identified patent application is/are:

☒ Petition for Extension of Time (1 page)

☒ Response to Restriction Requirement (37 C.F.R. §1.143; §1.111) (5 pages)

Respectfully submitted,

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August 4, 2004
Beverly, Massachusetts

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO RESTRICTION REQUIREMENT (37 C.F.R. §1.143; §1.111)

This paper is filed in response to the June 8, 2004 Restriction Requirement issued in the above-identified patent application. A Petition for a one (1) month extension of time under 37 C.F.R. §1.136(a) is enclosed herewith. The Commissioner is hereby authorized to charge the required fee (small entity) of $55.00, pursuant to 37 C.F.R. §1.17(a)(1), along with any other fees that may be due, to Deposit Account No. 50-1774, Ref. No. CST-138CIP2. With the extension, the present paper is due on or before August 9, 2004.

REMARKS

Applicants acknowledge that the Examiner assigned to the present application has changed. The new Examiner has withdrawn the previous Restriction Requirement dated September 17, 2003 (to which Applicants timely responded) and has presently rejoined claims 1, 17-20, 22, and 27-45, previously withdrawn by Applicants in their response to the first Restriction Requirement. Claims 1-4 and 11-45 (as previously amended) are presently pending.

The Examiner has required that the claimed subject matter be restricted to one of the following:

Group I (claims 1-4, 11, 12, 14-24, 26, and 37-43, in part): drawn to motif-specific,

context-independent antibodies that specifically bind a modified kinase consensus substrate motif selected from the group consisting of MAPK, CDK, PKA, Akt, PKC, and ATM motifs, and a method for producing such antibodies (class 436, subclass 547; class 424, subclasses 130.1 and 185.1, and class 530, subclass 389.1);

Group II (claims 1-4, 11, 13, 14-23, 25, 26, 37-41, and 45, in part): drawn to motif-specific, context-independent antibodies that specifically bind a modified kinase consensus substrate motif selected from the group consisting of PKC Zeta, ABL, CDK5, CAMKII, Src Kinase, CDC2/CDK2, and GSK3 motifs, and a method for producing such antibodies (class 436, subclass 547; class 424, subclasses 130.1 and 185.1, and class 530, subclass 389.1);

Group III (claims 1-4, 11-26, 37-43, and 45, in part): drawn to motif-specific, context-independent antibodies that specifically bind a modified protein-protein binding motif selected from the group consisting of 14-3-3, PDK1/bulky ring consensus docking, and PI3K P85 binding motifs, and a method for producing such antibodies (class 436, subclass 547; class 424, subclasses 130.1 and 185.1, and class 530, subclass 389.1);

Group IV (claims 27-35, in part): drawn to methods of screening and detecting proteins bound by a motif-specific, context-independent antibody that specifically binds a recurring kinase consensus substrate motif selected from the group consisting of MAPK, CDK, PKA, Akt, PKC, and ATM motifs (class 435, subclasses 7.1 and 973);

Group V (claims 27-34, and 36, in part): drawn to methods of screening and detecting proteins bound by a motif-specific, context-independent antibody that specifically binds a recurring kinase consensus substrate motif selected from the group consisting of PKC Zeta, ABL, CDK5, CAMKII, Src Kinase, CDC2/CDK2, and GSK3 motifs (class 435, subclasses 7.1 and 973); and

Group VI (claims 27-36, in part): drawn to methods of screening and detecting proteins bound by a motif-specific, context-independent antibody that specifically binds a recurring protein-protein binding motif selected from the group consisting of 14-3-3, PDK1/bulky ring consensus docking, and PI3K P85 binding motifs (class 435, subclasses 7.1 and 973).

Among the pending claims, the Examiner notes that claims 3 and 21 (among others) are generic, and that the species recited in claims 12-14 (and 24-26) fall within these generic claims.

The Examiner argues that the subject matter of Groups I-III (drawn to antibodies and a process for their manufacture) is independent and distinct from that of Groups IV-VI (drawn to process of use) MPEP §806.05(h). Although Applicants disagree, no reconsideration of restriction between these two sets of groups is presently requested, and Applicants hereby withdraw the claims of Groups IV-VI (claims 27-36).

The Examiner also argues that the subject matter of Groups I, II, and III (each drawn to a preferred subset of antibodies and a method for their production) are independent and distinct because they are "structurally and functionally different products which are made by the different claimed methods and have different uses" (see June 8, 2004 Restriction Requirement at p. 4). Although Applicants disagree with respect to Group III, no reconsideration of restriction respecting this group is presently requested, and Applicants hereby withdraw the claims of Group III (claims 1-4, 11-26, 37-43, and 45, in part) to the extent they read on protein-protein binding motifs. However, as discussed in more detail below, reconsideration of the restriction between Groups I and II is presently requested.

REQUEST FOR RECONSIDERATION

Applicants respectfully request that the Examiner reconsider the restriction between the subject matter of Groups I and II. As recognized by the Examiner, the claims of both of these two groups are drawn to antibodies that specifically bind a recurring modified kinase consensus substrate motif and a method for producing such antibodies. Both groups contain the same genus claims (claims 3 and 21 (as previously amended)). Group I contains one dependent Markush group of preferred species within the genus claims (MAPK, CDK, PKA, Akt, PKC, and ATM motifs) and Group II contains a second dependent Markush group of preferred species within the genus claims (PKC Zeta, ABL, CDK5, CAMKII, Src Kinase, CDC2/CDK2, and GSK3 motifs). Both groups also contain two other preferred species within the genus claims (phosphothreonine-X-(R/K) and proline-phosphoserine-proline, as recited in dependent claim 14 (and 26). Thus, the subject matter of the claims of *both* Groups I and II is a genus (and certain preferred species) of

antibodies that specifically bind a recurring modified kinase consensus substrate motif and a method for producing such antibodies. These antibodies share structural and functional features, are produced by the same method, and have similar uses.

The antibodies of Groups I and II share common essential characteristics and are connected in design, operation, and effect. The claimed antibodies (of Groups I and II) are all designed to, and functionally do, specifically bind short, recurring, kinase consensus substrate motifs/structures (which comprise two to six invariant amino acids including at least one phosphorylated amino acid and optionally (but typically) one or more degenerate positions) that are relevant to signal transduction. Each species of antibody within the genus binds a particular phosphorylated kinase consensus substrate motif having such common structural features. Each species of antibody within the genus has the same essential characteristic of binding its target motif in a plurality of peptides/proteins within an organism in which it recurs (as opposed to merely binding a site in a single protein). The kinase consensus substrate-motif-specific, context-independent antibodies of Groups I and II are produced by the same disclosed method (using a degenerate peptide library as an antigen) and have the same primary use: to detect the target motif in a plurality of peptides or proteins in organism in which it occurs (*i.e.* a single antibody is suitable for detecting many different target proteins). Since the subject matter of the claims of Groups I and II share essential characteristics and are connected in design, operation, and effect they are not independent and distinct (indeed, the subject matter of these two Groups share identical class/subclass of search (436 sub 547; 424 sub 130.1 and 185.1; 530 sub 389.1)). *See* MPEP §808.01.

Applicants respectfully submit that a search of the subject matter of Groups I and II, while requiring some effort, will not be unduly burdensome, since searching this identically classed and subclassed subject matter for the terms "kinase," "motif" and "antibody" will readily identify any prior art that relates to antibodies capable of specifically binding a recurring kinase consensus motif (including the preferred species of the dependent Markush groups). Such art, if any, can then be reviewed to determine if the disclosed matter meets all limitations and features of the presently claimed subject matter. *See* MPEP §803, §808.02.

Accordingly, Applicants respectfully request that they be allowed to retain the subject matter of Groups I and II in the present application, and, as provided in 37 C.F.R. §1.141(a), that

they be allowed to have the reasonable number of preferred species recited in dependent claims 12-14 (and 24-26) examined on the merits if one or more common generic claims (*e.g.* claims 3 and 21) are held allowable. As required under 35 U.S.C. §121 and § 37 C.F.R. §1.143, Applicants hereby provisionally elect the Akt consensus substrate motif species for prosecution on the merits, in the event no generic claim is held allowable.

Upon withdrawal of the restriction requirement with respect to the subject matter of Groups I and II, Applicants are prepared to submit a voluntary amendment to the claims that will be examined on the merits (relating to kinase consensus substrate motifs), in order to remove reference to non-elected subject matter and to place the claims in better condition for examination and allowance.

Conclusion

The presently elected claims are believed to be in condition for immediate allowance. Reconsideration and withdrawal of the remaining restriction requirement pertaining to the pending claims of Groups I and II is respectfully requested. Early and favorable consideration and allowance of these claims is earnestly solicited. If there are any questions regarding these remarks, the Examiner is requested to call the undersigned attorney at the telephone number provided.

Respectfully submitted,

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